

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently amended): A process for carrying out a high-temperature reaction, in a reactor comprising a reaction chamber and a quench area, in which starting materials are supplied to the reaction chamber through channels of a burner block, where in the reaction chamber the high-temperature reaction having a short residence time takes place at a temperature of at least 1500°C and the reaction mixture is subsequently rapidly cooled in the quench area, ~~characterized in that~~ wherein in the quench area firstly a direct cooling to a temperature in the range from 650°C to 1200°C takes place by supply of an evaporating quench medium and subsequently in the quench area an indirect cooling in a heat exchanger takes place.

Claim 2 (Currently amended): ~~[[A]]~~ The process as claimed in claim 1, ~~characterized in that~~ wherein the starting materials are premixed prior to supply to the reaction chamber.

Claim 3 (Currently amended): ~~[[A]]~~ The process as claimed in claim 1, ~~characterized in that~~ wherein the direct cooling takes place to a temperature in the range from 700°C to 1000°C.

Claim 4 (Currently amended): ~~[[A]]~~ The process as claimed in claim 1, ~~characterized in that~~ wherein the direct cooling takes place in one or more stages.

Claim 5 (Currently amended): ~~[[A]]~~ The process as claimed in claim 1, ~~characterized in that~~ wherein the quench medium is water or a hydrocarbon or a hydrocarbon mixture.

Claim 6 (Currently amended): ~~[[A]]~~ The process as claimed in ~~claims~~ claim 1, characterized in that the indirect cooling takes place to less than 300°C.

Claim 7 (Currently amended): ~~[[A]]~~ The process as claimed in claim 1, ~~characterized in that~~ wherein the indirect cooling is utilized for the preheating of the starting materials or for the generation of steam.

Claims 8-19 (Canceled).

Claim 20 (Currently amended): ~~[[A]]~~ The process as claimed in claim 1, wherein the high-temperature reaction produces acetylene by partial oxidation of hydrocarbons ~~using~~ with oxygen.

Claim 21. (Canceled)

Claim 22 (Currently amended): ~~[[A]]~~ The process as claimed in claim 1, ~~characterized in that~~ wherein the direct cooling takes place to a temperature in the range from greater than 800°C to 1200°C.

Claim 23 (Currently amended): ~~[[A]]~~ The process as claimed in claim 1, ~~characterized in that~~ wherein the direct cooling takes place to a temperature in the range from 850°C to 1200°C.

Claim 24 (Currently amended): ~~[[A]]~~ The process as claimed in claim 1, wherein the evaporating quench medium evaporates completely.

Claim 25 (Previously Presented): The process as claimed in claim 20, wherein the acetylene yield is about 29% based on carbon.

Claim 26. (Canceled)

Claim 27. (Previously Presented) A process comprising passing a product stream of a reaction, conducted at a temperature of greater than or equal to 1500°C, and having a residence time of from 1 to 100 ms, through a quench area, wherein the product stream has a residence time in the quench area of from 1 to 100 ms, and wherein, within the quench area, the product stream is first cooled to a temperature of from 650 to 1200°C with an evaporating quench medium, and then subsequently cooled in a heat exchanger.